CHILDHOOD SPORTS-RELATED ORO-FACIAL INJURIES

Background

The potential for exposure to oro-facial trauma situations is significant when one considers that 20 million children aged 6 to16 are playing out-of-school sports and 25 million youths are participating in competitive school sports.[1] The magnitude of the problem is further reflected by a report indicating sports account for 36% of all unintentional injuries to children and adolescents.[2] However, the lack of a national database makes an accurate quantification difficult.

There appears to be a high incidence of oro-facial injuries in 8 year olds, when youngsters are experiencing a growth spurt and athletic skill levels are not matured.[3] Boys are more prone to oro-facial injury than girls: 13.1 injuries/100 boys/season vs. 5.9 injuries/100 girls/season with an increased risk for injury with increased age.[4] Injuries appear to be more numerous in team sports, but more severe in individual sports.[1]

Oro-facial injuries vary by sports; the mandatory use of protective gear by football and hockey athletes appears to limit their vulnerability when compared with soccer, basketball, and baseball athletes.

Chipped incisor/avulsed incisor teeth are the most common sports-related oro-facial injuries. Mandibular fractures are the most common orofacial fracture: 31% of all mandibular fractures are sports related.[5] Ten percent of all maxillofacial fractures are sports related.[6]

Helmets and facemasks offer the athlete the most effective protection from oro-facial injuries; the devises are used in boxing, football, hockey, and lacrosse. The most common preventive measure used by youth and adolescent athletes is the mouthguards. Athletic mouthguards are designed to protect: the lips and intraoral soft tissue from lacerations; the teeth from fractures and avulsions; and the jaws from fractures and dislocations. Further, it has been suggested that mouthguards may reduce indirect concussions. Mouthguards are classified as: Type I: Stock mouthguards, Type II: Mouth formed mouthguards, and Type III: Custom fabricated mouthguards. This classification system is based upon an ascending order of preference, protection, and cost.

As role models and authority figures, trainers and coaches influence young athletes' attitudes and actions. Therefore, it is disappointing to note that 90% of coaches in the United States have never taken an oro-facial injury risk management course.[7] An equally troubling finding is that many coaches and trainers are not favorably disposed to mouthguard use in organized sports programs.[8, 9]

Need/Problem in Rhode Island

A lack of a state database makes an accurate quantification of the problem difficult. However, given there were an estimated 24,400 youngsters (boys = 14,200, girls = 10,200) participating in organized Rhode Island Interscholastic League (RIIL) sports programs[10], and assuming an injury rate of 13.1 injuries/100 boys/season and 5.9 injuries/100 girls/season, one can conservatively estimate 2,500 injuries in RIIL sponsored programs. Estimates of injuries in unorganized activities are more problematical since there is no accurate enumeration of participants.

Addressing the Issue in Rhode Island

A combination of systems development, education services and prevention services is proposed as one potential solution to this public health issue.

- Oro-facial Injury Reporting System Development
  - Rhode Island Department of Health directed activity
    - Strongly encourage hospital emergency departments in the state to participate.
    - Recommend private practice physicians to participate.
    - Recommend private practice dentists to participate.
- Education services
  - Public education activity targeting athletes, parents, school administrators, school nurse teachers, coaches, trainers, and RIIL officials re: oro-facial injury prevention and mouthguard use.
  - Health professions education activity targeting private practice physicians re: oro-facial injury prevention and mouthguard use.
    - Training meetings
  - Health professions education activity targeting the practicing dental community re: oro-facial injury prevention, mouthguard use, and mouthguard fabrication.
    - Training meetings
- Prevention services
  - Commitment from private practice dentists to participate in mouthguard fabrication programs in their city/town.
  - Commitment from commercial dental insurers to reimburse for mouthguard fabrication.
  - Commitment from Rhode Island Medicaid program to reimburse for mouthguard fabrication.

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